

### **REMARKS**

The Office Action mailed October 20, 2005 has been carefully considered.

Claims 1-21 are pending and stand rejected.

Claims 1, 3-5, 8, 10-12, 15 and 17-19 have been amended.

The specification is objected for including the term “to be determined” with regard to the serial numbers of related applications.

Applicant, in view of the objection, has requested that the specification be amended to include the serial numbers of the related applications.

Having amended the specification as indicated, it is submitted that the reason for the objection is no longer applicable. Applicant, through his attorney, respectfully requests that the rejection between withdrawn.

Claims 1-21 stand rejected under 35 USC 112, second paragraph as being indefinite.

Applicant respectfully disagrees in part with the statements made in the Office Action. With regard to the term “extent of the clone,” applicant, through his attorney, submits that the specification on page 9 describes “an extent [is] a number of contiguous data block on an LU that is represented by a specific amount of data, e.g., a bit in a map, e.g., a bitmap.” One skilled in the art would understand that the term “extent of the clone” would describe “a number of contiguous data blocks” within the clone. Therefore, it is respectfully submitted that the referred-to term is not indefinite as the terms “extent” and “clones” are clearly described in the written description of the instant patent application.

With regard to the term “may be” applicant disagrees with the remarks made in the Office Action but has amended the recited claims to contain the term “are” in place of “may be.”

For at least these reasons applicant submits that the reason for the rejection has been overcome. and respectfully requests that the rejection be withdrawn.

Claim 1-21 stand rejected under 35 USC 103 as being unpatentable over Young (USP no. 5,898,7681 in view of Kitagawa (USP no. 5,522,037). It would be noted that the instant Office Action refers to USP no. 6,522,037 as being a reference being issued to Kitagawa. However a search of the US Patent and Trademark Office website reveals that the 6,522,037 patent was

issued Lee. A further search of the website reveals that the US patent 5,522,037 was issued to Kitagawa, upon which the analysis presented herein is based. If it is found that the applicant is incorrect in presenting arguments with regard to USP no. 5,522,037, applicant reserves the right to present new arguments with regard to the correctly provided reference.

Applicant respectfully disagrees with the reason for rejecting the claims. However, in the interest of advancing the prosecution of this matter, the independent claims have been amended to more clearly state the invention. More specifically, the claims have been amended to recite resuming the restore operation by determining whether corresponding bits in the delta map are set and corresponding bit in the persistent protected restore map are not set. No new matter has been added. Support for the amendment may be found at least on page 15, lines 17-20 which state "this determination is made by checking both the Delta Map and the Protected Restore Map. If there are bits set in any of the extents of the Delta Map that represent those regions affected by the host I/O request (read or write) and the corresponding bit is NOT set in the Protected Restore Map, then a COD is required." (emphasis in the original).

Young discloses a system for providing a copy of data at a point in time that includes a data storage device including a master store arranged to store blocks of data, at least one subsidiary store to store point in time copy data having blocks of data copied from said master store at a particular point in time and a bitmap store associated with each of the subsidiary stores to store data indicating when a data block of the master store differs from a corresponding data block stored in the associated subsidiary store. (see Abstract). Young further discloses that if a data block is to be overwritten in a master store, then the controller checks whether the copy bitmap bit for that data block is set to 0 or is still a 1. If the copy bit is still set at 1 then before the data block is overwritten the controller copies the data block into the corresponding address in the shadow store, sets the shadow bit corresponding to that data block to 1 to indicate that the data block in the master store has been overwritten and sets the copy bit corresponding to that data block to 0 in the copy bitmap. (see col. 8, lines 22-40).

Accordingly, Young discloses saving data before being its being overwritten when the indicator indicates that the data has not been copied and setting an indication of the saving of the data. Young fails to disclose or suggest continuing a restore process by determining whether

corresponding bits in the delta map are set and corresponding bit in the persistent protected restore map are not set, as is recited in the claims.

Kitagawa discloses a backup control apparatus that provides for full or differential backup. More specifically, Kitagawa discloses executing one of a whole backup process for copying all the data stored in the backup target medium and a differential backup process for extracting data which was updated in the backup target medium wherein the backup process and which backup process is determined each time the backup starting conditions are satisfied. (see col. 23, lines 17-29).

The Office Action states that "Kitagawa teaches: 'a method of recovering the clone data in a situation wherein an operation to restore the source is interrupted during the restoration of data' (e.g. column 2, lines 38-39) for using a backup system which reduces time in the event of interruption during data recovery." A reading of these two lines in the Kitagawa reference reveals Kitagawa discusses that "since the work is interrupted during the recovery, it is necessary to reduce the time." However Kitagawa fails to point with specificity any teaching or suggesting "using the persistent protected restore map and the persistent clone delta map to resume the restore operation that had been interrupted," or "by determining whether corresponding bits in the delta map are set and corresponding bit in the persistent protected restore map are not set," as is recited in the claims.

A claimed invention is *prima facie* obvious when three basic criteria are met. First, there must be some suggestion or motivation, either in the reference themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the teachings therein. Second, there must be a reasonable expectation of success. And, third, the prior art reference or combined references must teach or suggest all the claim limitations.

With reference to claim 1, neither Young nor Kitagawa, individually or in combination, teach or suggest all the elements recited in the above referred-to claim. More specifically, neither Young nor Kitagawa teach "continuing a restore process by determining whether corresponding bits in the delta map are set and corresponding bit in the persistent protected restore map are not set," as is recited in the claims. Hence, even if there were some motivation to combine the teachings of the cited reference, which is not believed to exist in either reference, the combined device would fail to teach all the features recited in independent claim 1.

Applicant: David Haase, *et al.*  
U.S.S.N.: 10/673,864  
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EMC Docket No.: EMC-03-102

Accordingly, the invention recited in claim 1 is not rendered obvious by the teachings of the cited reference, as the combined device fails to recite all the elements claimed in independent claim 1, for example.

Having shown that the combined device fails to disclose all the elements claimed, applicant submits that the reason for the rejection has been overcome and can no longer be sustained. Applicant respectfully requests withdrawal of the rejection and allowance of the claim.

With regard to the remaining independent claims, these claims recite subject matter similar to that recited in claim 1 and were rejected citing the same references used in rejecting claim 1. Thus, applicant's remarks made in response to the rejection of claim 1 are also applicable in response to the rejection of the remaining independent claims. Applicant submits that in view of the amendments made to the remaining independent claims, which are the same as those made to claim 1, and for the remarks made with regard to the rejection of claim 1, which are reasserted, as if in full, in response to the rejection of the remaining independent claims, the reason for the rejection of these claims has been overcome and the rejection can no longer be sustained. Applicant respectfully requests withdrawal of the rejection and allowance of the claims.

The other claims in this application are each dependent from the independent claim discussed above and are therefore believed patentable for the same reasons. Applicant respectfully requests withdrawal of the rejection and allowance of the claims.

In view of the foregoing, the applicant believes that the application is in condition for allowance and respectfully request favorable reconsideration.

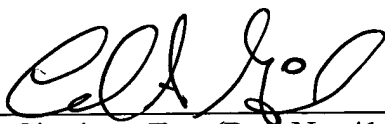
In the event the Examiner deems personal contact desirable in the disposition of this case, the Examiner is invited to call the undersigned attorney at 914 798 8505.

Please charge all fees occasioned by this submission to Deposit Account No. 05-0889.

Applicant: David Haase, *et al.*  
U.S.S.N.: 10/673,864  
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Respectfully submitted,

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